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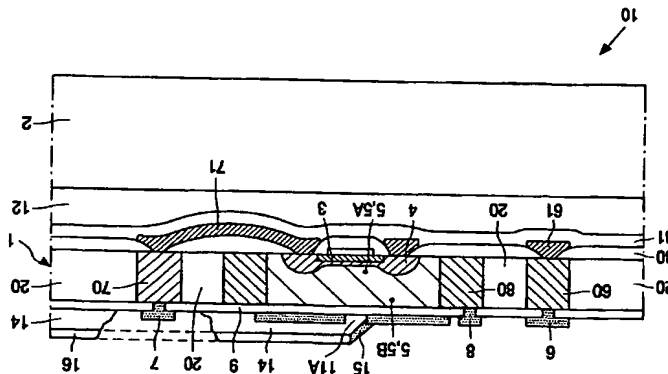
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(54) Title: RADIATION-EMITTING SEMICONDUCTOR DEVICE AND METHOD OF MANUFACTURING SUCH A DEVICE



(57) Abstract: The invention relates to a radiation-emitting semiconductor device (10) with a semiconductor body (1) and a substrate (2), wherein the semiconductor body (1) comprises a vertical bipolar transistor with an emitter region (3), a base region (4) and a collector region (5), which regions are each provided with a connection region (6, 7, 8), and the border between the base region (4) and the collector region (5) forms a pn-junction and, in operation, at a reverse bias of the pn-junction or at a sufficiently large collector current, avalanche multiplication of charge carriers occurs whereby radiation is generated in the collector region (5). According to the invention, the collector region (5) has a thickness through which transmission of the generated radiation occurs, and the collector region (5) borders on a free surface of the semiconductor body (1). In this way, less of the generated radiation is lost by absorption and the radiation generated is more readily available to serve as an optical signal for, for example, another part of the device (10) or for another device (10). A second sub-region (5B) in the collector region (5) may be made for example with the aid of a gate electrode (11) with which a conducting channel can be induced in the semiconductor body (1). Preferably, a radiation conductor (14) is present on the surface of the latter. The invention further comprises a method of manufacturing a device (10) according to the invention.

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